

WHAT IS CLAIMED IS:

1. An optical tag, comprising:
 - a) a photo-detector responsive to an incident optical energy at a predetermined wavelength;
 - b) a controller in electrical communication with the photo-detector;
 - c) a piezoelectric translator in electrical communication with the controller;
 - d) a battery in electrical communication with the piezoelectric translator; and
 - e) a reflective tape in mechanical communication with the piezoelectric translator.
2. The optical tag of Claim 1, wherein the reflective tape includes a retro-reflective tape to reflect the optical energy along a path that the optical energy is incident.
3. The optical tag of Claim 1, wherein the optical energy is a continuous optical wave.
4. The optical tag of Claim 1, wherein the photo-detector includes an indium gallium arsenide PIN photodiode.
5. The optical tag of Claim 1, wherein the predetermined wavelength is about 1.55 μm .
6. The optical tag of Claim 1, further comprising a filter disposed on the photo-detector.
7. The optical tag of Claim 6, wherein the filter has a narrow bandpass at the predetermined wavelength.
8. The optical tag of Claim 1, wherein the photo-detector is operative to generate a photocurrent upon reception of the optical energy.
9. The optical tag of Claim 8, wherein the photocurrent generated by the photo-detector is output to the controller.
10. The optical tag of Claim 9, wherein the battery is operative to supply an electric power to the piezoelectric translator when the photocurrent is input to the controller.
11. The optical tag of Claim 1, wherein the piezoelectric translator is operative to expand and contract while being connected to the battery.
12. The optical tag of Claim 1, wherein the piezoelectric translator is operative to generate a stroke with a predetermined length to the retro-reflective tape while being connected to the battery.

13. The optical tag of Claim 12, wherein the predetermined length is about 0.75 μm .
14. The optical tag of Claim 12, wherein the retro-reflective tape is operative to receive and modulate the optical energy according to the stroke generated by the piezoelectric translator.
15. The optical tag of Claim 14, wherein the retro-reflective tape is operative to retro-reflect the modulated optical energy.
16. The optical tag of Claim 1, further comprising a Fresnel lens above the retro-reflective tape.
17. The optical tag of Claim 16, wherein the retro-reflective tape is located at a focal point of the Fresnel lens.
18. The optical tag of Claim 1, further comprising an enclosure enclosing the photo-detector, the controller, the piezoelectric translator, the battery, and the retro-reflective tape therein.
19. An optical tag, comprising:
 - a piezoelectric translator operative to generate a pulse when an optical energy at a predetermined wavelength is incident on the optical tag; and
 - a retro-reflective tape in contact with the piezoelectric translator, the retro-reflective tape being operative to modulate phase of the optical energy according to the pulse generated by the piezoelectric translator and retro-reflect the modulated optical energy incident thereon.
20. The optical tag of Claim 19, further comprising:
 - a photo-detector operative to generate a photocurrent while receiving of the optical energy; and
 - a controller, operative to receive the photocurrent and activate the piezoelectric translator.
21. The optical tag of Claim 20, further comprising a battery connected to the piezoelectric translator when the controller receives the photocurrent.
22. The optical tag of Claim 19, further comprising a Fresnel lens for focusing the optical energy on the retro-reflective tape.
23. The optical tag of Claim 19, further comprising:
 - an amplifier operative to amplify the photocurrent;
 - an interface to decode data contained in the photocurrent; and
 - a data retrieval device operative to retrieve the data.

24. The optical tag of Claim 23, wherein the data retrieval device includes an earpiece.
25. The optical tag of Claim 23, wherein the data retrieval device includes a display.
26. An interrogating system, comprising:
 - an interrogating beam source, operative to scan an interrogating beam with a predetermined wavelength through a field; and
 - an optical tag, operative to respond the optical signal with an identification code, wherein the optical tag comprising:
 - a piezoelectric translator, operative to generate a pulse for modulating the optical signal; and
 - a retro-reflective tape, operative to modulate the optical signal with the identification code according to the pulse and retro-reflect the modulated optical signal back to the interrogating beam source.
27. The interrogating system of Claim 26, wherein the interrogating beam source includes a laser beam source.
28. The interrogating system of Claim 26, wherein the predetermined wavelength is about 1.55 μm .
29. The interrogating system of Claim 26, wherein the interrogating beam source is placed in an airborne platform.
30. The interrogating system of Claim 26, wherein the optical tag is mounted on a vehicle.
31. The interrogating system of Claim 26, wherein the optical tag is held by a person.
32. A method of interrogating a target from an airborne platform, comprising:
 - generating a optical signal at a predetermined wavelength;
 - converting the optical signal into a photocurrent;
 - generating a pulse in response to the photocurrent;
 - modulating the optical signal with an identification according the pulse; and
 - retro-reflecting the modulated optical signal.
33. The method of Claim 32, further comprising:
 - providing a photo-detector to receive the optical signal and to generate the photocurrent;

providing a piezoelectric translator activated by the photocurrent to generate the mechanical pulse; and

providing a retro-reflective tape on the piezoelectric translator to modulate and retro-reflect the optical signal.

34. The method of Claim 33, further comprising a step of connecting the piezoelectric translator to a battery to generate the pulse.

35. The method of Claim 33, further comprising a step of varying the identification code of the target by changing material, thickness, and/or area of the piezoelectric translator.

36. The method of Claim 33, further comprising a step of varying the identification code of the target by changing material, thickness, and/or area of the retro-reflective tape.

37. The method of Claim 32, further comprising the steps of:
decoding the photocurrent into readable data or audio format; and
retrieving the data or information by a data retrieval device.